compare the costs and outcomes of azacitidine (75 mg/m2 per day x 7 days every 4 weeks) vs. decitabine (45 mg/m2 per day x 3 days every 6 weeks) from the perspective of SUS. **METHODS:** We developed a Markov model to determine the cost-effectiveness (CE) and 3-year budget impact of introducing AZA in the Brazilian market. Patients considered were classified with IPSS Int 1, Int 2 and High risk. The model considered progression to acute myelogenous leukemia (AML) and death as the major outcomes of treatment. Outcomes, costs and epidemiological data were obtained from a systematic review of literature and public sources. The costs of adverse events and progressive disease were also included. A sensitivity analysis was performed to test the robustness of the results. The currency conversion used was BR$ 1.8: US$1.0. **RESULTS:** The cost effectiveness analysis showed better results for AZA compared to DEC resulting in lower costs and improved outcomes in terms of mortality rates and progression to AML. Over a 3-year time period, the use of AZA was associated with a savings of BR$85,000 (US$45,000) compared to DEC. Assuming that AZA would be given to 50% of patients with MDS in Brazil, it would have a budgetary impact of BR$45,000 000 (US$25,000,000) for the public health care system SUS. **CONCLUSIONS:** When compared to DEC, AZA showed improved outcomes and lower costs as a treatment option for MDS in the Brazilian public health system.

PCN32

COMPARING HEALTH CARE RESOURCE USE, COSTS AND ADVERSE EVENTS AMONG LUNG CANCER PATIENTS TREATED WITH STANDARD CHEMOTHERAPY WITH OR WITHOUT AN ANGIOGENESIS INHIBITOR: A RETROSPECTIVE DATABASE STUDY

Lang K[1], Huang H[1], Foley D[2], Finnern HW[2], Menzin J[1]
[1]*Boston Health Economics, Inc., Waltham, MA, USA,* [2]*Boehringer Ingelheim Pharmaceuticals, Inc., Ridgefield, CT, USA*

OBJECTIVES: To estimate resource use, costs, and adverse events (AEs) among lung cancer (LC) patients on standard chemotherapy with versus without an angiogenesis inhibitor (AGI) as adjunctive therapy. **METHODS:** Using Thompson Reuters MarketScan® Research Database, patients with a diagnosis code indicating primary LC between 2005 and 2009 and at least one claim for an FDA approved AGI (bevacizumab) within 8 days of chemotherapy were identified (AGI cohort). These patients were matched 1:1 by demographics, cancer characteristics, and previous chemotherapy failure (≥30 days without chemotherapy) to patients on chemotherapy with no claims for an AGI (No-AGI cohort). Patients were followed for ≥1 month. All-cause per-patient-per-month (PPPM) resource use (inpatient, ER, and outpatient), costs (in 2010 USD), and the prevalence of AEs were assessed. **RESULTS:** A total of 766 patients were identified for each cohort (mean age 57.5 years, 47.9% female). Mean follow-up was 10.4 and 11.6 months in the AGI and No-AGI cohorts. All components of resource use were similar between cohorts. All-cause total PPPM cost was higher for the AGI cohort ($16,972 vs. $11,950 PPPM), primarily due to higher outpatient infusion costs ($7,703 vs. $1,423). Over 52% of patients in each cohort had ≥1 AE, and there were no statistically-significant differences in the prevalence of AEs between groups. The most common AEs were infusion reactions (40.6% in AGI vs. 39.7% in No-AGI), dyspnea, (38.1% vs. 43.0%), nausea (37.6% vs. 33.8%), dehydration (32.9% vs. 34.1%), chest pain (28.9% vs. 31.5%), anemia (26.1% vs. 24.4%), neutropenia (24.9% vs. 24.7%), thromboembolic events (17.2% vs. 20.6%), and hemorrhage (15.4% vs. 12.7%). **CONCLUSIONS:** Prevalence of AEs was not significantly different among LC patients on chemotherapy with and without an AGI. Costs were higher in the AGI cohort, due to higher infusion costs. Future studies of the cost-effectiveness of AGIs in LC patients based on real-world data are warranted.

PCN33

INDIRECT ANALYSIS OF THE EFFICACY AND SAFETY OF PEMETREXED/CISPLATIN COMPARED WITH BEVACIZUMAB/GEMCITABINE/CISPLATIN AS FIRST-LINE TREATMENT FOR ADVANCED, NON-SQUAMOUS NON-SMALL CELL LUNG CANCER AND ASSOCIATED TREATMENT COSTS IN THE PRIVATE MEXICAN HEALTH CARE SYSTEM

Ramirez Gamez J[1], Cruz Cadena A[1], Davey P[2], Rajan N[3], Barraclough H[3], Orlando M[4]
[1]*Eli Lilly México, Barranca, Mexico DF, Mexico,* [2]*Illuminate Health Consulting, Sydney, NSW, Australia,* [3]*Eli Lilly Australia Pty Limited, West Ryde, NSW, Australia,* [4]*Eli Lilly Interamerica Inc., Buenos Aires, DNN, Argentina*

OBJECTIVES: We performed an indirect comparison of efficacy and safety data for two combination chemotherapy regimens (pemetrexed/cisplatin [PC] and bevacizumab/cisplatin/gemcitabine [BCG]) approved for the first-line treatment of advanced, non-squamous non-small cell lung cancer (NSCLC). Our objectives were to compare the survival outcomes and approximate mean incremental costs in México for these two approved regimens using data from two phase III trials with a common comparator (cisplatin/gemcitabine [CG]). **METHODS:** An indirect treatment comparison was conducted using the Bucher method. One study compared CG with BCG and included two doses of bevacizumab, but only the data for the 7.5 mg/kg dose of bevacizumab was included in our analysis because this dose is more commonly used for NSCLC in México. The cost analysis included the estimated costs of chemotherapy and costs related to the treatment of grade 3 or 4 adverse events. Total chemotherapy drug costs were based on the mean number of cycles of chemotherapy delivered in the two studies. Costs were calculated in 2011 Mexican pesos and converted to US dollars. **RESULTS:** Significantly fewer patients experienced a grade ≥3 adverse event with PC than BCG (risk difference: -10.50%; 95% confidence interval [CI]: -18.4 to -2.71, p=0.008). Overall survival was not significantly different for PC vs BCG (hazard ratio [HR]=0.87, 95% CI: 0.69 to 1.10, p=0.242), although in the individual trials PC had a significant survival advantage over CG (HR=0.84; 95% CI: 0.74 to 0.96, p=0.011) while BCG (7.5 mg/kg bevacizumab) had no survival advantage (HR=0.93; 95% CI: 0.78 to 1.11. p=0.420). The total estimated costs were $20212 lower for PC than BCG. The cost savings for the PC regimen were predominantly due to lower pharmacy-related drug costs ($10501 vs $30121). **CONCLUSIONS:** PC had lower estimated costs and less serious toxicity compared to BCG and produced at least comparable survival outcomes.

PCN34

DESCRIPTIVE COSTS OF CHEMOTHERAPY TREATMENT FOR STAGE 3 AND STAGE 4 COLON CANCER

Reese ES[1], Bikov K[2], Onukwugha E[1], Mullins CD[1]
[1]*University of Maryland School of Pharmacy, Baltimore, MD, USA,* [2]*University of Maryland Baltimore, Baltimore, MD, USA*

OBJECTIVES: The National Cancer Institute (NCI) estimates that cancer accounted for approximately $124.57 billion dollars in direct costs in the United States in 2010. NCI provides costs estimates on the initial, continuing and last 'phase of care' but does not provide a breakdown by stage. This study aims to describe the costs associated with stage 3 (S3) and stage 4 (S4) colon cancer (CC). **METHODS:** Data from 1997-2005 of the Surveillance, Epidemiology, and End-Result-Medicare dataset was used for this analysis. Individuals included were those diagnosed as having AJCC S3 or S4 CC. Analyses excluded individuals who were not eligible for Medicare Parts A and B or those insured by Medicare HMO. Areas under the curve (AUC) for direct medical costs were summed over a 40 week period, from time of CC diagnosis. Costs contributed were from beneficiaries who died from S3 and S4 CC and were ever treated with chemotherapy. Costs were summed for S3 and S4 individuals with at least 26 weeks of initial chemotherapy treatment. **RESULTS:** These analyses identified 3549 individuals with S3 CC and 8194 individuals with S4 CC. Over the 40 week observation period, the AUC for S3 and S4 CC was $52,145, and $45,106, respectively. Mean weekly costs peaked at week 31 for S3 CC ($3425) and at week 29 for S4 CC ($1,725). Among S3 and S4 individuals with at least 26 weeks of initial chemotherapy treatment, the AUC was $35,890 for S3 CC and $49,871 for S4 CC. **CONCLUSIONS:** Among individuals who died with S3 or S4 CC and were ever treated with chemotherapy, the costs associated with S3 cancer exceed those of S4 cancer over the 40 week observation period. Among those with at least 26 weeks of initial chemotherapy and treatment, S3 chemotherapy treatment is less expensive than S4 chemotherapy treatment.

PCN35

EPOETIN ALFA AND DARBEPOETIN ALFA DOSING PATTERNS AND COSTS IN CHEMOTHERAPY-INDUCED ANEMIA HOSPITAL OUTPATIENTS

Lafeuille MH[1], Forlenza JB[2], Khan A[2], Laliberté-Auger F[1], Lefebvre P[1]
[1]*Groupe d'analyse, Ltée, Montréal, QC, Canada,* [2]*Janssen Scientific Affairs, LLC, Horsham, PA, USA*

OBJECTIVES: This retrospective claims analysis aimed to compare erythropoiesis-stimulating agent (ESA) dosing patterns and costs in chemotherapy-induced anemia (CIA) hospital outpatients. **METHODS:** Electronic records from the Premier hospital database (2006Q1-2011Q1) were used to identify outpatients aged ≥18 years that had a diagnosis for cancer, received chemotherapy during hospitalization, and received epoetin alfa (EPO) or darbepoetin alfa (DARB).Exclusion criteria were: a diagnosis of chronic kidney disease, diagnosis of myelodysplastic syndrome, receipt of renal dialysis, or receipt of both ESAs. The observation period consisted of the outpatient continuous ESA episode, defined as the period from first to last outpatient visit with ESA use without a gap of more than one calendar month between ESA visits. The ESA dose ratio (Units EPO: mcg DARB) was calculated using the mean cumulative dose of EPO and DARB. ESA treatment costs were determined using cumulative dose and December 2010 wholesale acquisition costs. **RESULTS:** A total of 7413 outpatient ESA episodes (EPO: 3979; DARB: 3434) were identified. The EPO group had a lower proportion of females versus the DARB group (61.7% vs. 67.7%, respectively; P<0.001), however, EPO and DARB groups had a similar mean age (62.0 vs. 61.8 years, respectively; P=0.560) and duration of outpatient episode (2.3 months for both, P=0.738). The mean cumulative dose was EPO 212,752 Units and DARB 998 mcg, resulting in a dose ratio (Units EPO: mcg DARB) of 213:1. Corresponding mean ESA treatment costs were higher for DARB than for EPO (EPO: $3,223 vs. DARB: $5,352, P<0.001). **CONCLUSIONS:** In this analysis of CIA hospital outpatient records, a dose ratio (Units EPO: mcg DARB) of 213:1 was observed. Mean ESA treatment costs were observed to be approximately 66% higher for the DARB group than for the EPO group.

PCN36

EPOETIN ALFA AND DARBEPOETIN ALFA DOSING PATTERNS AND COSTS IN CHEMOTHERAPY-INDUCED ANEMIA INPATIENTS

Lafeuille MH[1], Forlenza JB[2], Khan A[2], Laliberté-Auger F[1], Lefebvre P[1]
[1]*Groupe d'analyse, Ltée, Montréal, QC, Canada,* [2]*Janssen Scientific Affairs, LLC, Horsham, PA, USA*

OBJECTIVES: This retrospective analysis aimed to compare erythropoiesis-stimulating agent (ESA) dosing patterns and costs in chemotherapy-induced anemia (CIA) inpatients. **METHODS:** Electronic records from the Premier hospital database (2006Q1-2011Q1) were used to identify inpatients aged ≥18 years that had a diagnosis for cancer, received chemotherapy during hospitalization, and received epoetin alfa (EPO) or darbepoetin alfa (DARB). Exclusion criteria were: a diagnosis of chronic kidney disease, diagnosis of myelodysplastic syndrome, receipt of renal dialysis, or receipt of both ESAs. The observation period consisted of the inpatient stay. The ESA dose ratio (Units EPO: mcg DARB) was calculated using the mean cumulative dose of EPO and DARB. ESA treatment costs were determined using cumulative dose and December 2010 wholesale acquisition costs. **RESULTS:** A total of 20,132 inpatient stays (EPO: 15,221; DARB: 4,911) were identified. The EPO group was older than the DARB group (65.0 vs. 63.7 years, respectively; P<0.001), had a

lower proportion of females (53.8% vs. 55.7%, respectively; P=0.019), and had a longer mean length of stay (LOS) (13.2 vs. 12.1 days, respectively; P<0.001). The mean cumulative dose was EPO 57,248 Units and DARB 211 mcg, resulting in a dose ratio (Units EPO: mcg DARB) of 271:1. Mean ESA treatment costs were higher for DARB than for EPO (EPO: $867 vs. DARB: $1,130; P<0.001). **CONCLUSIONS:** In this analysis of CIA inpatient records, a dose ratio (Units EPO: mcg DARB) of 271:1 was observed. Mean ESA treatment costs were observed to be approximately 30% higher for the DARB group than for the EPO group despite a longer LOS for the EPO group.

PCN37

COST COMPARISON OF ERLOTINIB VERSUS GENERIC DOCETAXEL IN SECOND-LINE NON-SMALL CELL LUNG CANCER IN ITALY

Schwander B[1], Ravera S[2], Giuliani G[2], Nuijten M[3], Walzer S[4]
[1]*AiM GmbH - Assessment in Medicine, Research and Consulting, Loerrach, Germany,* [2]*Roche S.p.A., Monza, Italy,* [3]*Ars Accessus Medica, Amsterdam (Jisp), The Netherlands,* [4]*F. Hoffmann-La Roche Pharmaceuticals AG, Basel, Switzerland*

OBJECTIVES: Lung cancer is the leading cause of cancer deaths worldwide (1.38 million cancer deaths, 18.2% of the total) and of cancer morbidity (1.61 million new cases, 12.7% of all new cancers). Currently only three second-line (2L) non-small cell lung cancer (NSCLC) pharmacotherapies are licensed in the European Union, the chemotherapies pemetrexed and docetaxel as well as the Epidermal Growth Factor Receptor (EGFR) Tyrosine Kinase Inhibitor (TKI) erlotinib. These therapy alternatives have shown a comparable efficacy (survival benefit). In the past cost comparisons showed that erlotinib was less costly compared to docetaxel, which itself was cheaper than pemetrexed. Nowadays erlotinib (and docetaxel) are still less expensive than pemetrexed; but docetaxel lost patent protection (basic compound patent) at the end of 2010, so the docetaxel drug costs have decreased rapidly, which poses the question of whether erlotinib still is the least costly therapy alternative in 2L NSCLC. **METHODS:** Italy has been selected exemplarily to compare the total therapy costs, estimated by combining country-specific drug costs, administration costs and adverse event costs of erlotinib and generic docetaxel in 2L NSCLC therapy. Sensitivity analyses on central input parameters have been performed. **RESULTS:** The total costs of treating one patient with erlotinib therapy of €5121 are lower than the docetaxel costs of €6699 for the Italian healthcare setting. Although the drug costs of erlotinib are higher than generic docetaxel (incremental €3770), the costs of intravenous chemotherapy administration (incremental -€4510) and the costs of adverse event therapy (incremental -€837) lead to higher total therapy costs of docetaxel compared to the EGFR TKI therapy erlotinib. **CONCLUSIONS:** The cost comparison findings for Italy show that erlotinib is still the less costly therapy alternative in 2L NSCLC. These results were robust to changes of central input parameters and robust to further potential price decreases for docetaxel.

PCN38

PHYSICIAN-SPECIALTY COST DIFFERENCES OF TREATING NON-MELANOMA SKIN CANCER (NMSC): AN UPDATE

Chirikov VV, Stuart B, Zuckerman IH
University of Maryland School of Pharmacy, Baltimore, MD, USA

OBJECTIVES: Studies have previously reported specialty-related cost differences for the treatment of non-melanoma skin cancer (NMSC) but without attempting to establish a causal relationship. This study addresses if specialty-related cost differences in the management of NMSC still persist, controlling for potential confounders. **METHODS:** Using a previously validated model for episode of care for NMSC, patients diagnosed with NMSC were identified in part B of the Medicare Current Beneficiary Survey claims from 2005-07. Physician specialty exposure during an episode was defined in three approximately mutually exclusive categories: 1) General Practitioner/Family Medicine/Internal Medicine/General Surgeon/Others; 2) Dermatologist; 3) Otolaryngologist/Plastic Surgeon. A log-linear regression model was built of treatment cost as dependent variable and physician exposure as independent variable controlling for treatment settings, patient demographics, health status, treatment procedure, tumor size and tumor location that may contribute to differences in the cost of NMSC management. **RESULTS:** Over years 2005-2007, 1449 unique episodes of care for the management of NMSC were identified, 24% of which were not treatment-related episodes. Analyzing treatment-related episodes only, significant median cost differences across the three specialty categories were observed: $297.4 for generalist/other specialist, $441.5 for dermatologist, and $672.8 for otolaryngologist/plastic surgeon. In regression analysis, compared to dermatologist, having seen a generalist/other specialist was associated with 29.6% lower costs (P<0.001) while having seen an otolaryngologist/plastic surgeon was associated with 24.6% higher costs (P<0.001). Those living in metro areas were likely to have 11% (P=0.04) higher costs. Treating a tumor in the facial area was associated with 17% (P<0.001) higher costs than a tumor in the trunk area of the body. **CONCLUSIONS:** This study suggests that controlling for demographics, health status, and treatment predictors, unaccounted specialty-related cost differences still exist in the management of NMSC and require further investigation.

PCN39

DIRECT MEDICAL COSTS ASSOCIATED WITH DIFFERENT LINES OF THERAPY FOR COLORECTAL CANCER (CRC) PATIENTS

Curkendall SM[1], Bonthapally V[2], Meyer NM[3], Miller JD[3], Bonafede MM[3], Ray S[2]
[1]*Thomson Reuters, Washington, DC, USA,* [2]*Abbott Laboratories, Abbott Park, IL, USA,* [3]*Thomson Reuters, Cambridge, MA, USA*

OBJECTIVES: To describe the demographic and clinical characteristics and comorbidities of colorectal cancer (CRC) patients and to evaluate the disease-specific expenditures (i.e., insurer-paid costs and patient-incurred out-of-pocket [OOP] expenses) incurred by CRC patients with one, two, and three or more lines of therapy. **METHODS:** Data were from the *Thomson Reuters MarketScan® Research Databases*. The analysis population included patients ≥18 years with incident CRC during 2005-2009 who utilized one or more lines of CRC therapy (defined by a 90-day gap in treatment or initiation of a new regimen). Demographic characteristics, health status indices, and comorbidities were measured at baseline and/or during follow-up. Expenditure data (i.e., paid amounts of adjudicated claims) were collected for patients while on therapy. OOP expenses were coinsurance and copayments. Average per-patient monthly expenditures (2009 US dollars) were calculated in composite for all patients from initiation of first-line therapy through follow-up, and also disaggregated by each line of therapy. **RESULTS:** Among 13,670 CRC patients, 9,224 (67.5%) had exactly one line of therapy, 2,836 (20.7%) had exactly two lines, and 1,610 (11.8%) had three or more lines of therapy. Total per-patient expenditures for first-line therapy averaged $12,067 per month, but increased to $13,312 for patients transitioning to second-line therapy, and to $14,651 for patients transitioning to third-line therapy. Monthly OOP expenses were a small (about 2%) contributor to total costs, ranging from $241, $246, and $238 by respective lines of therapy. Total monthly expenditures for patients covered by commercial insurance were substantially (>50%) higher than for patients covered by Medicare supplemental insurance. **CONCLUSIONS:** Ranging from about $12,000 to $15,000 per month by increasing lines of therapy, direct costs of CRC present a significant economic burden to health plans and self-insured employers. Patient-borne OOP expenses are relatively small but meaningful contributors to the overall financial burden imposed by CRC.

PCN40

PATIENT SURVIVAL, HEALTH CARE UTILIZATION, AND COSTS IN MEDICARE PATIENTS WITH ACUTE MYELOID LEUKEMIA COMPARED TO MATCHED CONTROLS

Meyers J[1], Yu Y[2], Davis KL[1]
[1]*RTI Health Solutions, Research Triangle Park, NC, USA,* [2]*Boehringer Ingelheim Pharmaceuticals, Inc., Ridgefield, CT, USA*

OBJECTIVES: To compare survival and healthcare utilization and costs among Medicare patients with acute myeloid leukemia (AML) versus a matched cohort of Medicare patients without cancer. **METHODS:** Patients aged 65+ years in the Surveillance, Epidemiology, and End Results (SEER) cancer registry with a new AML diagnosis from January 1, 1997 to December 31, 2007 were identified (first diagnosis termed "index"). Patients were required to have >6 months Medicare Part A and B benefits pre-index and no managed care enrollment post-index. Patients were excluded if they had another tumor in SEER pre-index. Medicare patients without cancer were identified and matched up to 5 to 1 based on age (±5 years), gender, race, geographic location, and common comorbidities. Patients were followed from index (or index of the corresponding AML patient among controls) to death or database end (i.e., December 31, 2007). Study measures included median survival and health care utilization and costs. Generalized linear models were undertaken to estimate adjusted costs. **RESULTS:** A total of 6,888 selected AML patients were matched to 22,346 controls. Among AML patients and controls respectively, mean (SD) age was 78.3(7.2) and 72.7(6.7) years, median survival was 2.6 and 131.7 months, mean (SD) total follow-up costs were $90,395($104,228) and $26,900 ($41,840), and mean (SD) average monthly follow-up costs were $26,990 ($30,719) and $269 ($468). The largest proportion of costs was hospitalization-related in both cohorts (74% and 42% of total, respectively). The cost difference between cohorts was mainly attributable to hospitalizations ($56,314 difference), followed by outpatient visits ($3,382 difference) (both p<0.001). AML patients and controls had approximately the same number of emergency department, outpatient hospital, and home health visits. Regression analyses found AML patients accrued $74,177 more in costs than controls (p<0.001). **CONCLUSIONS:** While AML patients had shorter median survival, they accrued 3 times more costs, mainly driven by hospitalizations. This indicates a substantial economic burden incurred by AML patients to Medicare.

PCN41

ECONOMIC BURDEN ASSOCIATED WITH ADVERSE EVENTS IN PATIENTS WITH METASTATIC RENAL CELL CARCINOMA

Borker RD[1], Knapton LM[2]
[1]*GlaxoSmithKline, Philadelphia, PA, USA,* [2]*GlaxoSmithKline, Durham, NC, USA*

OBJECTIVES: To estimate costs associated with adverse events (AEs) in patients receiving targeted therapies for first-line treatment of metastatic renal cell carcinoma (mRCC). **METHODS:** A retrospective study utilizing the Integrated Healthcare Information Services (IHCIS) claims data from 2000 to 2009 was conducted. Study subjects were aged ≥18 years, had mRCC, and received 1st line treatment with targeted therapies. AEs of interest comprised abdominal pain, back pain, diarrhea, dyspnea, extremity pain, fatigue/asthenia, hand-foot syndrome, hypertension, lymphopenia, nausea/vomiting, neutropenia, and proteinuria. Healthcare encounters for AEs were based on ICD-9-CM diagnosis/procedure codes on healthcare claims. Costs of AEs were examined over a 30-day period, beginning with the date of first mention of each AE, and were estimated based on the difference in total costs between patients with and without events; nonevented patients similarly were assigned a "shadow" index date. Direct drug costs of targeted agents were excluded from the analysis. Multivariate generalized linear models (GLM) with a log-link function and gamma response probability distribution were utilized to control for differences in baseline characteristics between patients with and without evidence of adverse events. **RESULTS:** A total of 533 patients were included in this analysis: 418 patients with adverse events and 115 patients without adverse events. Baseline characteristics were generally similar between patients in the two